

lest, under the chilling shade of synonymy, they lose the power which they need in all its fulness to help them solve the more important problems which, from the sides of embryology, anatomy, and palæontology, are receiving, if not their solution, yet their due attention.

The influences of "environment" are carefully noted by our authors, who are led to think that, in some cases at any rate, "the exigencies of arctic existence have acted in retarding the progress of growth-characters and in the maintenance of the youthful or more simple form." Again, they direct attention to the variations which they have observed in the length of the spinelets of the paxillæ of *C. papposus*, pointing out that extreme shortness is probably the result of abrasion, and consequently depends on the nature of the locality. "Thus a starfish inhabiting the comparative calms of deep water would be subject to much less friction than one frequenting a littoral district or amongst pebbly shingle."

From the point of view of the zoological student we desire, if we may be allowed, to congratulate the authors on the conclusion of a work which will be to them a source of pardonable pride, and ourselves on a monograph which sufficiently proves that there are in England two naturalists, at any rate, to whom a valuable collection of Echinodermata may very safely be intrusted for description.

MISCELLANEOUS.

Discovery of a Fossil Bird in the Jurassic of Wyoming.

By O. C. MARSH.

THE oldest birds hitherto known from American strata are the toothed forms (*Odontornithes*), from the Middle Cretaceous deposits on the eastern flanks of the Rocky Mountains. In Europe, three specimens of the genus *Archæopteryx* have been found in the Jurassic, but from other formations no remains of this class have been brought to light. The writer has made a careful search for fossil birds in the Jurassic beds of the West, and has been rewarded by the discovery of various remains, some of which are sufficiently characteristic for determination. The most important of these specimens is described below.

Laopteryx priscus, gen. et sp. nov.

The type specimen of the present species is the posterior portion of the skull, which indicates a bird rather larger than a blue heron (*Ardea herodias*). The brain-case is so broken that its inner surface is disclosed; and in other respects the skull is distorted; but it shows characteristic features. The bones of the skull are pneumatic. The occipital condyle is sessile, hemispherical in form, flattened, and slightly grooved above. There is no trace of a posterior groove. The foramen magnum is nearly circular, and small in pro-

portion to the condyle; its plane coincides with that of the occiput, which is slightly inclined forward. The bones around the foramen are firmly coossified; but the supraoccipital has separated somewhat from the squamosals and parietals. Other sutures are more or less open. On each side of the condyle, and somewhat below its lower margin, there is a deep rounded cavity, perforated by a pneumatic foramen.

The cavity for the reception of the head of the quadrate is oval in outline; and its longer axis, if continued backward, would touch the outer margin of the occipital condyle. This cavity indicates that the quadrate had an undivided head. The brain-case was comparatively small; but the hemispheres were well developed; they were separated above by a sharp mesial crest of bone. A low ridge divided the hemispheres from the optic lobes, which were prominent.

The following measurements indicate the size of the specimen:—

	millim.
Width of skull across occiput (approximate)	24
Transverse diameter of occipital condyle	5
Vertical diameter	4
Width of foramen magnum	5
Height	6
Distance from occipital condyle to top of supra-occipital	11

In its main features the present specimen resembles the skull of the Ratitæ more than that of any existing birds. Other parts of the skeleton will doubtless show still stronger reptilian characters.

In the matrix attached to this skull a single tooth was found, which most resembles the teeth of birds, especially those of *Ichthyornis*. It is probable that *Laopteryx* possessed teeth and also biconcave vertebræ.

The specimen here described, and others apparently of the same species, were found in the Upper Jurassic of Wyoming Territory, in the horizon of the *Atlantosaurus*-beds.

Yale College, New Haven, March 18, 1881.

Regeneration of lost Parts in the Squid (Loligo Pealei).

By A. E. VERRILL.

I have observed in this species, as well as in *Ommastrephes illecebrosus*, numerous instances in which some of the suckers have been torn off and afterwards reproduced. In such examples new suckers of various sizes, from those that are very minute up to those that are but little smaller than the normal ones, can often be found scattered among the latter, on the same individual. It seems to me possible that some of the specimens having the suckers on the tentacular arms unusually small, may have reproduced all those suckers, or, still more likely, the entire arm.

I have seen specimens of this species, and also of *O. illecebrosus*,